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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/915,754	07/27/2001	Alexandre Ryabov	07066-064001	7479
22434	7590	07/14/2004	EXAMINER	
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BERKELEY, CA 94704-0778			PAPER NUMBER	

2625

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Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

**Application No.**

09/915,754

**Applicant(s)**

RAYBOV ET AL

**Examiner**

Barry Choobin

**Art Unit**

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-35 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-35 is/are rejected.
- 7) ☒ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on \_\_\_\_ is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. §§ 119 and 120

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 13) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.
- a) ☐ The translation of the foreign language provisional application has been received.
- 14) ☒ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

### Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 6,10.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_

## **DETAILED ACTION**

### ***Information Disclosure Statement***

1. The information disclosure statement (IDS) submitted on May 20, 2002 is in compliance with the provisions of 37 CFR 1.97. Accordingly, the information disclosure statement is being considered by the examiner.
2. The information disclosure statement (IDS) submitted on July 17, 2003 is in compliance with the provisions of 37 CFR 1.97. Accordingly, the information disclosure statement is being considered by the examiner.

### ***Drawings***

3. Figures 1-4 should be designated by a legend such as --Prior Art-- because only that which is old is illustrated. See MPEP § 608.02(g). A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

### ***Claim Rejections - 35 USC § 103***

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains.

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Patentability shall not be negated by the manner in which the invention was made.

5. Claims 1-7, 12-17, 19-28 and 30-34 are rejected under 35 U.S.C. 103(a) as being unpatentable over Shinzaki et al (US 5,621,516) in view of Tsutsui et al (US 5,448,659).

As to claim 1, Shinzaki et al disclose an imaging device comprising: an optical plate including: a base made of an optically transparent material and having an index of refraction (fig.1, 51), the base including an array of microstructures along a first surface (fig.1).

Shinzaki et al does not expressly disclose a coating deposited on the first surface of the base and forming a surface for receiving a finger, the coating having an index of refraction that is different from the index of refraction of the base.

Tsutsui et al disclose coating deposited on the first surface of the base and forming a surface for receiving a finger, the coating having an index of refraction that is different from the index of refraction of the base (column 6, lines 4-21 in order to control the incident angle).

Shinzaki et al and Tsutsui et al are combinable because they both concern with identifying fingerprints.

Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to modify Shinzaki et al with the coating of Tsutsui et al in

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order to improve waveguid-type image transmission device without using independent optical elements such as an optical lens for radiating the illumination light beam and focusing the reflected light beam (column 1, lines 35-40 of Tsutsui et al).

Shinzaki et al disclose an imaging system positioned at a second surface of the base to receive light from the finger at an observation angle measured relative to the finger-receiving surface and to form an image of a fingerprint pattern of the finger based on the received light (fig.1).

As to claim 2, Shinzaki et al teaches a light source at a third surface of the base to illuminate the first surface of the base (fig.1).

As to claim 3, Shinzaki et al disclose the third surface is perpendicular to the first surface (fig.1).

As to claims 4, 26 and 32, Tsutsui et al disclose the index of refraction of the coating is less than the index of refraction of the base (column 6, lines 9-13).

As to claims 5 and 31, Shinzaki et al disclose each microstructure comprises a surface that is substantially perpendicular to an observation path such that light from the finger strikes the microstructure surface at an angle substantially Perpendicular to the microstructure surface (fig.1).

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As to claim 6, Shinzaki et al disclose the array of microstructures is defined by a spatial period that is approximately two times greater than a maximum spatial period of ridges in an average fingerprint pattern (fig.1).

As to claim 7, although neither prior art explicitly disclose silicone as a coating agent, the Examiner takes Official notice since surface coating with a clear rubber polyurethane or silicone layer is well known in the art fingerprint imaging. The motivation for doing so would be to improve the optical contact and the fingerprint resolution image (for Applicant's convenience and to support the Examiner Official Notice, the Examiner provides US 6665427)

As to claims 12 and 24, Shinzaki disclose the imaging system comprises: an aperture; an objective at the aperture; and a detector for receiving light collected by the aperture and the objective to form the image of the fingerprint pattern (fig.1)

As to claims 13 and 25, Shinzaki et al disclose the imaging system comprises a reflective surface positioned between the objective and the detector for collecting light from the objective and for focusing the light onto the detector (see claim 1, and fig.1).

As to claim 14, Shinzaki et al disclose detector comprises a CCD (fig.5).

As to claim 15, Shinzaki et al disclose the detector comprises a CMOS sensor (fig.5).

As to claim 16, Shinzaki et al disclose the aperture defines an aperture beam of light rays used by the detector to form the fingerprint pattern image (fig.1).

As to claim 17, Tsutsui et al disclose the index of refraction of the coating is greater than the index of refraction of the base (column 6, lines 4-21).

As to claims 18, 29 and 35, Shinzaki et al disclose each microstructure comprises a first surface and a second surface that are positioned such that light striking the first surface at an angle that is greater than the critical total internal reflection angle for the coating and the base interface reflects from the first surface and strikes the second surface at an angle that substantially coincides with a normal to the second surface (fig.1, reads on the limitations of this claim in light of interpretation of the Examiner regarding "the critical total internal reflection angle).

As to claim 19, this claim is similarly analyzed and rejected as claim.

As to claim 20, Shinzaki et al disclose positioning the light source at a third surface of the base, the third surface being perpendicular to the finger receiving surface (fig.1).

As to claims 21 and 33, Shinzaki et al disclose each microstructure comprises a surface that is perpendicular to an observation path (fig.1).

As to claim 22, Shinzaki et al disclose the array of microstructures is defined by a spatial period that is approximately two times greater than a maximum spatial period of ridges in an average fingerprint pattern (fig.1).

As to claim 23, Shinzaki et al disclose collecting light from the finger includes collecting the light from the finger onto the imaging system (fig.1).

As to claim 27, Shinzaki et al disclose a surface having a normal that substantially coincides with an observation path such that light from the finger strikes the microstructure surface at an angle that substantially coincides with a normal of the microstructure surface (fig.1).

As to claims 28 and 34, Tsutsui et al disclose the index of refraction of the coating is greater than the index of refraction of the base (column 6, lines 4-21).

As to claim 30, claim 30 is similarly analyzed and rejected as claim 1.

***Claim Rejections - 35 USC § 103***



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6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. Claims 8 –11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Shinzaki et al in view of Tsutsui et al as applied to claim 1 above, and further in view of Niizaki (JP 04078980A).

As to claim 8, the device of claim 1 (refer to claim 1, above).

Both Shinzaki et al and Tsutsui et al do not expressly disclose a base includes a spherically-shaped reflective surface positioned along a fourth surface that is approximately lateral to the first surface.

Niizaki on the other hand, disclose a base includes a shaped-shaped reflective surface positioned along a fourth surface that is approximately lateral to the first surface (abstract).

Niizaki is combinable with both Shinzaki and Tsutsui because they all deal with detecting an uneven shape or surface via light transmission.

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Therefore, it would have been obvious to an artisan of ordinary skill in the art at the time the invention was made to adopt the spherical converging mirror in order to reduce assembly error by emitting fully reflected scattered beams to the outside of a transparent light transmission body (abstract). Accordingly, one would be motivated to adopt the spherical converging mirror because it would reduce assembly error.

Claims 9-11 are similarly analyzed and rejected as claim 8.

### **CONTACT INFORMATION**


Any inquiry concerning this communication or earlier communications from the examiner should be directed to Barry Choobin whose telephone number is 703-306-5787. The examiner can normally be reached on M-F 7:30 AM to 18:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Bhavesh Mehta can be reached on 703-308-5246. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9314.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-305-3900.

Barry Choobin

July 8, 2004

  
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